ODP 4389-77
28 December 1977

MEMORANDUM FOR: Tom Yale
Acting Deputy Director for Administration

STATINTL   FROM   :   █████████████████   *Ann 1/3/78*
Acting Director of Data Processing

SUBJECT   : English Translation of CAMS Report in ODP
Weekly Report dated 2 December 1977

Background

CAMS is an online system accessed by users through
terminals. The data for the CAMS system is located on eight
magnetic storage units called disks. Data is read from or
written on a disk by a read/write head attached to a disk
arm which moves in and out across the rotating disk. Data
travels between the disk and the computer via a channel.
There are two channels in the CAMS system, each channel
supporting four of the eight disks.

Disks and channels can handle one request for data at
a time. Under ideal conditions, each disk should have 1/8th
of the data traffic and each channel should have 1/2 of the
load. A bad situation exists if a disk or channel is very
busy while other devices are idle. The terminal user sees
this condition as longer than normal response time.

Weekly Report

A study of the CAMS production system (CAMPROD), using
hardware and software monitoring devices, indicated that the
load on the eight disks and two channels was not balanced.
This caused a situation known as disk arm contention (every-
one wants to get to the same disk). Consequently, the data
was rearranged on the disks to get a better distribution.
There were two immediate results: 1) the CAMS terminal users
have indicated that their online requests have been processed
faster, and 2) there has been a 30% increase in the number of
requests processed from users.

The entire process of redistributing the data took 50 hours. For 20 hours terminal users could only ask questions from the files (no updates). For the remaining 30 hours the system was not available to terminal users at all.

The type of situation which developed on CAMS is not unusual for large online data bases accessed by many users at terminals. The loading on the system is dynamic and difficult to predict with a high degree of accuracy during system design. Only periodic monitoring of system performance under operational loads can spot bottlenecks and permit computer specialists to tune the system for better performance.   STATINTL

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  Orig + 1 - adse
          1 - ODP Registry
          2 - O/D/ODP

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